Michigan Department of Transportation

100% STATE FUNDED PROJECT

SCOPE OF SERVICE
FOR
DESIGN SERVICES

CONTROL SECTION(S): 63102

JOB NUMBER: 201222

PROJECT LOCATION:
B01-3 of 63102, I-696 EB over Rouge River in City of Southfield, Oakland County
B01-4 of 63102, I-696 WB over Rouge River in City of Southfield, Oakland County

PROJECT WORK DESCRIPTION:
This BIM for Bridges Model Delivery Pilot is MDOT's first project to deliver a 3D model as the contract document. The design work on the above structures will be modeled in 3D with the model delivered as the contract document. As a pilot, project deliverables include the bridge design as well as lessons learned and best practice workflows to guide future MDOT model delivery efforts. The format of the model deliverable will be developed over the course of the project in collaboration with MDOT. The Consultant will test and discuss the limitations of Bentley bridge modeling software, OpenBridge Modeler (OBM) and ProStructures, and what can be detailed in 2D vs 3D. Innovative ideas that prioritize an easy to consume model for users in review, fabrication, construction, and eventually asset management are encouraged.

Design of the structures must be created as a 3D model in OBM with the model delivered as the contract document in place of the typically required 2D plan set**.** Analytical design using Bentley products connected to the OBM model is optional. The 3D model will contain saved views of critical information. Supporting documents such as 2D details, tabular information, and specifications will be attached to the 3D model. The 3D model itself should be the primary source of design intent and only essential 2D details should be provided. Quantities, tables, reports, annotated views, etc. should be generated from, and update with, the model whenever feasible. MDOT and the Consultant will collaborate to develop preferred methods for sharing design information over the course of the pilot.

These bridges, B01-3 and B01-4 of 63102 are located on I-696 0.3 miles east of Telegraph Road in the City of Southfield, Oakland County, and are part of the reconstruction of I-696 from I-275 to Lahser Road in the Cities of Farmington Hills and Southfield. The bridges are a separate design contract from the reconstruction of I-696. The reconstruction of I-696 will be designed by others in 3D and delivered as a project PDF.

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Design work is for the replacement of the two structures, including removal of existing bridges, and shall accommodate any improvements proposed as part of the reconstruction of I-696 from I-275 to Lahser Road.

The scope of work includes the final load rating for the proposed bridges.

The consultant service for this contract includes the bridge design and modeling only. The selected consultant will be responsible for coordinating with the survey and road design consultant.

The approach roadway design and maintenance of traffic plans and specifications as well as mobility analysis, Transportation Management Plan, and safety analysis will be completed by others as part of the I-696 Reconstruction from I-275 to Lahser Road contract.

Survey tasks will be completed by others as part of the I-696 Reconstruction from I-275 to Lahser Road contract.

Note: MDOT will provide the hydraulic analysis and geotechnical borings and analysis.

The scope of work will be verified at a Scope Verification Meeting with MDOT personnel and the selected Vendor following the Vendor's selection. This meeting will be scheduled prior to Vendor's submittal of the priced proposal to MDOT Project Manager.

ADDITIONAL INFORMATION

All consultants interested in submitting a proposal for this work will respond with a **three page** Statement of Qualifications e-mailed to both, the MDOT Project Manager and Proposal Agent listed below before the time/date posted to the web. Any Statement of Qualifications (response) received after this day/time will be considered non-responsive. The Statement of Qualifications will include:

- Understanding of Service
    - Focus understanding on 3D modeling and deliverables
- Qualifications of Team
- Key Personnel available for **immediate work**
- Resumes of Key Personnel (limit 2 pages per resume, pages do not count toward page limit stated above)

Questions regarding this solicitation must be submitted to the MDOT Project Manager in writing (e-mail) no later than three (3) business days prior to the date and time that the proposal response is due.

GENERAL STAFFING REQUIREMENTS

The selected consultant is expected to provide a satisfactory number of qualified personnel as necessary to effectively carry out its responsibilities under this project. There may be work during nighttime hours, on weekends, and/or generally under tight time constraints.

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CONSULTANT SERVICE TASKS:
Design of the work as described above.
This is an as-needed service:

☐ *YES*

X NO

ANTICIPATED SERVICE START DATE: July 2020

ANTICIPATED SERVICE COMPLETION DATE: December 2021

DBE PARTICIPATION REQUIREMENT: 0%

PRIMARY PREQUALIFICATION CLASSIFICATION(S):
Design: Bridges

SECONDARY PREQUALIFICATION CLASSIFICATION(S):
Design – Bridges: Load Rating

PREFERRED QUALIFICATIONS AND CRITERIA (FOR NON-CLASSIFIED SERVICES):

1) UTILITY COORDINATION
X The Consultant and MDOT shall share responsibilities for project Utility Coordination. See attached "Scope of Services for Utility Coordination".

MDOT PROJECT ENGINEER MANAGER:
All correspondence related to this Request for Proposals should be directed to Marcia Yockey using the contact information included below:

Marcia Yockey, P.E., Bridge Support Engineer
MDOT – Design Services
Van Wagoner Building
425 W. Ottawa Street
P.O. Box 30050
Lansing, MI 48909

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Phone: (517) 242-9322
E-mail: YockeyM@Michigan.gov

MDOT PROPOSAL AGENT:

Melissa Kitchin-Banghart
MDOT Bureau of Bridges and Structures
Van Wagoner Building
425 W. Ottawa Street
P.O. Box 30050
Lansing, MI 48909
E-mail: KitchinBanghartM@michigan.gov

CONSTRUCTION COST:

A. The estimated cost of construction is:

1.	**Mainline Pavement**	**$**
2.	**Geometric Improvement**	**$**
3.	**Environmental**	**$**
4.	**Drainage**	**$**
5.	**Safety**	**$**
6.	**Non-Motorized**	**$**
7.	**Maintaining Traffic**	**$**
8.	**Miscellaneous Bridge Cost**	**$12,500,000**
9.	**Detours and Maintaining Traffic**	**$**
10.	**Permanent Pavement Markings/Signs/Signals**	**$**
11.	**Miscellaneous**	**$_____**
	CONSTRUCTION TOTAL	**$12,500,000**

B. The estimated cost of real estate is: $0

The above construction total is the amount of funding programmed for this project. The Consultant is expected to design the project within the programmed amount.

If at any time the estimated cost of construction varies by more than 5% of the current programmed amount, then the Consultant will be required to submit a letter to the MDOT Project Manager justifying the changes in the construction cost estimate.

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REQUIRED MDOT GUIDELINES AND STANDARDS:

Work shall conform to current MDOT, FHWA, and AASHTO practices, guidelines, policies, and standards (i.e., Road Design Manual, Standard Plans, Published MDOT Design Advisories, Drainage Manual, Special Details, Special Provisions (both standard and unique), Roadside Design Guide, A Policy on Geometric Design of Highways and Streets, Michigan Manual of Uniform Traffic Control Devices, etc.).

The Consultant is required to use the current MDOT Connect Workspace with the CONNECT Editions of Bentley OpenBridge Modeler/OpenBridge Designer (2019 Release 3 or later), ProStructures (Update 4 or later), and/or OpenRoads Designer (2020 Release 1 or later). A 3D model of the bridge is the required contract document. The Consultant shall comply with all MDOT CADD standards and file naming conventions. The Consultant will coordinate with MDOT to establish saved view and i-model naming conventions.

ADDITIONAL INFORMATION:

Existing bridge information is available in ProjectWise at following link: Yockey REQ XXXX

MDOT RESPONSIBILITIES:

A. Schedule and/or conduct the following:
   1. Project related meetings
   2. Scope Verification Review
   3. Base Plan (Model) Review
   4. The Plan (Model) Review
   5. Final Project Coordination
   6. Omissions/Errors/Check
   7. Utility Coordination Meeting(s)
   8. Maintaining Traffic Meeting(s**)**
   9. Final AP Preconstruction item cost estimates – Using the Consultant supplied files
   10. Submit project for final turn in to MDOT Specifications and Estimates Unit.

B. Furnish pertinent reference materials.

C. Furnish example model of a similar project and old plans of the area.

D. Obtain all permits for the project as outlined in previous section.

E. Coordinate any necessary utility relocation(s)

F. Provide MDOT ProjectWise login account and instructions for software download and configuration.

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G. Act as liaison between the Consultant and Bentley to coordinate support for troubleshooting, modeling issues, suggested workarounds, and requested software enhancements.

H. Furnish traffic data for I-696.

I. Determine the type of aesthetics to be incorporated into the design of the project.

J. Perform hydraulic modeling and scour analysis with available hydraulic information.

K. Perform geotechnical borings, analysis, and foundation recommendations.

L. Assemble the milestone submittal packages using information provided by the Consultant Team.

CONSULTANT RESPONSIBILITIES:

Complete the design of this project including, but not limited to the following:

The Consultant must adhere to all applicable OSHA and MIOSHA safety standards, including the appropriate traffic signs for the activities and conditions for this job and perform field operations in accordance with the Department's Personal Protective Equipment (PPE) policy as stated in the MDOT Guidance Document #10118.

Meet with the MDOT Project Manager to review project, location of data sources and contact persons, and review relevant MDOT operations. The Consultant shall review and clarify project issues, data needs and availability, as well as the sequence of events and team meetings that are essential to complete the design by the project plan (model) completion date. Attention shall be given to critical target dates and project milestones that may require a large lead time, such as geotechnical requirements, utility conflict resolution, local agency meetings, Real Estate requirements, etc.

A. Develop a structure study composed of a PDF report and 3D model with a conceptual level of detail. The 3D model shall replace and include all of the information outlined in the MDOT Bridge Design Manual Section 3.01.01 for the 2D plan set.

B. Provide a crosswalk mapping equivalent elements between the traditional contract and model delivery that identifies traditional requirements, the intent of those requirements, and how the model satisfies that intent. Submit an initial crosswalk and updated versions at each milestone. Final crosswalk will clearly identify location of all contract elements including typical design details, Special Provisions, Notice to Bidders, etc.

C. Coordinate work required to incorporate the hydraulic analysis and scour countermeasure design information into the project.

D. Coordinate work required to incorporate the geotechnical analysis and foundation recommendations into the project.

E. Coordinate with MDOT and MDOT design consultants on the I-696 Reconstruction from I-275 to Lahser Road project to provide any information needed to complete the design tasks they are responsible for.

F. Incorporate the selected maintenance of traffic concept into the design of the bridge and bridge approach slabs. The selected Consultant will be given the opportunity to provide comments on the maintenance of traffic concept prior to the selection of the concept.

G. Develop model that accurately details design for construction. Create saved views within model of critical components, unique elements (abutments, piers, deck, etc.), and typical cross-sections, and attach details and specifications to the model required for design and construction.

H. Compute and verify all design quantities. Quantities should be calculated with the model and checked independently.

I. Prepare representations and/or views of construction stages taking into account excavations and temporary works. Attribution of the model should include stages of work.

J. Within the model, provide staging views and attach special provisions for maintaining traffic during construction.

K. Complete the final load rating of the superstructure. The load rating must be completed using the Load Resistance and Factor Rating (LRFR) method utilizing the AASHTOWare Bridge Rating software or another program approved by the MDOT Load Rating Program Manager. The final load rating will be completed and submitted with the Final Model. The final load rating deliverables must include a completed assumption form, summary form, program file and program output (in both PDF and native format). Submit any hand calculations, spreadsheets, etc. (in both PDF and native format) used in the load rating analysis.

L. Develop Lessons Learned from project that include recommendations and best practice workflows for future 3D model delivery projects.

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M. The Consultant may be required to provide Design Services during the construction phase of this project. If Construction Assistance is required, then a separate authorization for those services will be issued.

N. Submit the excavation locations which may contain contamination. Project Manager then can proceed in requesting a Project Area Contamination Survey (PACS).

O. If tree removals are anticipated, submit removal/clearing locations to Project Manager. The PM can then distribute locations to Environmental and area Resource Analyst for any restrictions or replacement requirements.

P. Maintain a Design Project Record in ProjectWise, which includes a history of significant events (changes, comments, etc.) which influenced the development of the model, dates of submittals and receipt of information.

Q. The Consultant shall prepare and submit in ProjectWise (in PDF format) a Critical Path Method (CPM) network for the construction of this project. CPM networks are required on certain projects as determined in the Progress Clause, Special Provisions, and by the Engineer.

R. The Consultant representative shall record the minutes and submit in ProjectWise (in PDF format), for all project related meetings to the MDOT Project Manager within two weeks of the meeting date. The Consultant shall also distribute the minutes to all meeting attendees. MDOT will provide and distribute official meeting minutes for The Plan (Model) Review Meeting.

S. The Consultant will provide to MDOT, by entering into MDOT ProjectWise at the scheduled submittal dates, a read-only 3D model with attached supporting documents (2D details and specifications) and critical saved views, and additional electronic proposal documents (in PDF format) for distribution by MDOT for all reviews for this project. The Consultant will also provide any other electronic files for Reference Information Document (RID) preparations and other milestone requirements as directed by the Project Manager. The Project Manager will then create an electronic review set and distribute for commenting as applicable.

T. Prepare and submit electronically (native format or PDF) into MDOT ProjectWise, any information, calculations, hydraulic studies, models, or drawings required by MDOT for acquiring any permit (i.e. NPDES, EGLE, etc.), approvals (i.e. county drain commission) and related mitigation. MDOT will submit permit requests.

U. Identify industry training needs and conduct workshops demonstrating how to utilize the 3D documents with project stakeholders, including, but not limited to,

MITA, MDOT construction, fabricators, and MDOT Quality Assurance. Prepare training materials and guidance documents for reference beyond the workshops.

V. Attend information meetings (i.e., public hearings, open houses, etc.) with the public and public officials to assist in responding to concerns and questions. May require the preparation of displays such as maps, saved views and animations from the 3D model, etc.

W. The MDOT Project Manager shall be the official MDOT contact person for the Consultant **and shall be made aware of all communications regarding this project**. The Consultant must either address or send a copy of all correspondence to the MDOT Project Manager. This includes all Subcontractor correspondence and verbal contact records.

X. The Consultant shall contact the MDOT Project Manager whenever discoveries or design alternatives have the potential to require changes in the scope, limits, quantities, costs, or right-of-way of the project.

Y. The Consultant shall be responsible for obtaining and showing in the model (or supporting documents) the location and names of all existing utilities within the limits of the project. When resolving utility conflicts, the Consultant shall make modifications to the model or design details and provide assistance as directed by the MDOT Utility Coordinator and/or Project Manager. The Consultant shall attend any utility meetings called to ensure that the concerns are addressed in the model and/or design details involving utilities. The Consultant shall assist in the review of utility permit requests to ensure compatibility with the project.

Z. The Consultant shall be responsible for obtaining and showing in the model (or supporting documents) the location and names of all soil borings within the limits of the project. Evaluate the feasibility of incorporating a visual representation of the soil borings into the 3D model.

AA. Evaluate the feasibility of a model centric data delivery workflow for steel reinforcement and beam fabrication.

BB. On the first of each month, the Consultant Project Manager shall submit in ProjectWise a monthly project progress report to the MDOT Project Manager.

DELIVERABLES:

The Consultant shall enter in MDOT ProjectWise, in the appropriate folders, all electronic files associated with the project in their native format (spreadsheets, i-model files, CADD files, GEOPAK files, OBM Templates etc.) as directed by the MDOT Project Manager or as part of

each milestone submittal at a minimum. All CADD/GEOPAK files shall be created and identified with standard MDOT file names per the latest MDOT naming conventions. For documents and files without standards such as models, i-models, and saved views, the Consultant will coordinate with MDOT to establish naming conventions. It is the Consultant's responsibility to obtain up to date MicroStation and GEOPAK seed/configuration files necessary to comply with MDOT's CADD standards which are published monthly to the MDOT website. Any CADD/GEOPAK files that do not conform to MDOT standards will be returned to the Consultant for correction at the Consultant's expense.

Proposal documents shall be submitted, to MDOT ProjectWise, in the appropriate folders, in their native format with standard naming conventions as well as combined into one PDF file in the sequence specified by MDOT. To provide text search capabilities the combined proposal shall be created by converting native electronic files to PDF. Scanning to PDF is discouraged except in instances where it is necessary to capture a legally signed document or a hard copy version of a document is all that exists.

The Consultant will implement digital signature protocols for all applicable documents as determined by MDOT and the MDOT Project Manager.

The 3D bridge model and supporting models shall be submitted to MDOT ProjectWise in the appropriate folders in dgn or i.dgn format. For final Model Turn-In, a title sheet shall be printed, signed, sealed, and then scanned for inclusion with the PDF set. The original title sheet shall be sent to the MDOT Project Manager

Reference Information Documents (RID) shall be entered into MDOT ProjectWise in the appropriate folder with standard naming conventions and content at milestone submittals as defined by the MDOTwiki website - Chapter 4 and Chapter 5 of the Design Submittal Requirements. The RID files included will depend on the design survey deliverables and project template (See MDOT wiki - Chapter 2 of the Design Submittal Requirements). These files could include but are not limited to: CADD, existing terrain, proposed cross sections, 3D models and files generated for Automated Machine Guidance (AMG) and automated inspection/stakeout activities.

It is recommended that the Project Quantity Spreadsheet (PQS) be used to generate the xml files necessary for import into the AASHTOWare Project Preconstruction bid letting software. The .xml files shall be entered into MDOT ProjectWise in the appropriate folder. Corresponding PDF files for required reports will be generated as directed by the MDOT Project Manager.

All models, details, special provisions, estimates, and other project related items shall meet all MDOT requirements and detailing practices (i.e., format, materials, symbols, patterns, and layout) or as otherwise directed by the MDOT Project Manager. All models, details, specifications, and other project related items are subject to review and approval by MDOT.

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Upon completion of the contract documents, prior to letting, the Consultant will issue the native final format of all files to the MDOT Project Manager in MDOT ProjectWise. This will include, but not limited to, all corresponding reference files, calculations, meeting notes, CADD files, survey files, spreadsheets, and document files. These will become property of the Department.

PROJECT SCHEDULE:

The Consultant shall use the following events to prepare the proposed implementation schedule as required in the Guidelines for the Preparation of Responses on Assigned Design Services Contracts and as approved by the MDOT Project Manager. These dates shall be used in preparing the Consultant's Monthly Progress Reports.

MDOT
Preconstruction Tasks
Consultant Checklist
Planisware Form Only

MDOT PRECONSTRUCTION TASKS CONSULTANT CHECKLIST

Version 16
Updated
01-29-2019

For questions on specific tasks, refer to the Preconstruction Task Manual located on the MDOT Website.
For assistance in accessing this manual, please contact:
Dennis Kelley: (517) 335-4420

Please indicate with a check in the box next to each task number whether you believe that task will require consultant involvement on the job. Milestones (a specific event at a point in time) are italicized and underlined. See the Preconstruction Task Manual for more details. Scheduling assistance may be accomplished with estimated completion dates. While not part of Planisware, an Authorization Milestone and Post-Design Tasks have been included for your reference.

STUDY (EARLY PRELIMINARY ENGINEERING)

YES	NO		PRECONSTRUCTION TASK NUMBER AND DESCRIPTION	DATE TO BE COMPLETED BY (mm/dd/yyyy)
			CONSULTANT CONTRACT AUTHORIZATION/EXECUTION	/ /
			INFORMATION GATHERING/STUDIES	
☐	☐	1115	Traffic Data Collection for Studies	/ /
☐	☐	1120	Prepare Traffic Analysis Report for Studies	/ /
☐	☐	1125	Traffic Capacity Analysis for Studies	/ /
☐	☐	1155	Request/Perform Safety Analysis for Studies	/ /
☐	☐	1300	Traffic Impact Study	/ /
☐	☐	1350	Determine Need for Interstate Access Change Request	/ /

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☐	☐	1400	Feasibility Study	/	/
☐	☐	1500	Corridor Study	/	/
☐	☐	1555	Interstate Access Change Request	/	/
☐	☐	*155M*	*FHWA Approval of Interstate Access Change Request*	/	/
☐	☐	1600	Access Management Study Plan	/	/
☐	☐	1700	Other Miscellaneous Studies	/	/
			EPE SCOPING ANALYSIS		
☐	☐	2100	Scope Verification and Initiation of EPE Activities	/	/
☐	☐	2115	Prepare Traffic Analysis Report for EPE/Design	/	/
☐	☐	2120	Traffic Data Collection for EPE/Design	/	/
☐	☐	2125	Traffic Capacity Analysis for EPE/Design	/	/
☐	☐	2130	Prepare Project Purpose and Need	/	/
☐	☐	*213M*	*Concurrence by Regulatory Agencies with the Purpose and Need*	/	/
☐	☐	2140	Develop and Review Illustrative Alternatives	/	/
☐	☐	2155	Request/Perform Safety Analysis for EPE/Design	/	/
☐	☐	2160	Prepare and Review EIS Scoping Document	/	/
☐	☐	*216M*	*Public Information Meeting*	/	/

MDOT PRECONSTRUCTION TASKS CONSULTANT CHECKLIST

STUDY (EARLY PRELIMINARY ENGINEERING) (cont'd)

YES	NO	PRECONSTRUCTION TASK NUMBER AND DESCRIPTION		DATE TO BE COMPLETED BY (mm/dd/yyyy)	
		EPE DRAFT ANALYSIS			
☐	☐	2310	Conduct Technical SEE Studies	/	/
☐	☐	2311	Cultural Resources Survey	/	/
☐	☐	2312	Recreational Survey – Section 4(f)/6(f)	/	/
		EPE DRAFT ANALYSIS (cont'd)			
☐	☐	2313	Endangered Species Survey	/	/
☐	☐	2314	Wetland Assessment	/	/
☐	☐	2315	Wetland Mitigation	/	/
☐	☐	2316	Other Technical Reports	/	/
☐	☐	2321	Prepare for Aerial Photography	/	/
☐	☐	2322	Finish/Print Aerial Photography	/	/
☐	☐	2330	Collect EPE Geotechnical Data	/	/
☐	☐	2340	Develop and Review Practical Alternatives	/	/
☐	☐	*233M*	*Aerial Photography Flight*	/	/
☐	☐	2360	Prepare and Review EA	/	/

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☐	☐	*236M*	*Approval of EA by FHWA*	/	/
☐	☐	2370	Prepare and Review Draft EIS	/	/
☐	☐	*237M*	*Approval of Draft EIS by FHWA*	/	/
☐	☐	2380	Distribute EA	/	/
☐	☐	*238M*	*Public Hearing for EA*	/	/
☐	☐	2390	Distribute DEIS	/	/
☐	☐	*239M*	*Public Hearing for DEIS*	/	/
			EPE FINAL ANALYSIS		
☐	☐	2510	Determine and Review Recommended Alternative	/	/
☐	☐	*250M*	*Concurrence by Reg Agencies with Recom Alternatives*	/	/
☐	☐	2525	Prepare and Review Engineering Report	/	/
☐	☐	2530	Prepare and Review Request for FONSI	/	/
☐	☐	*252M*	*Approval of FONSI by FHWA*	/	/
☐	☐	2540	Prepare and Review FEIS	/	/
☐	☐	*254M*	*Approval of FEIS by FHWA*	/	/
☐	☐	2550	Obtain ROD	/	/
☐	☐	*255M*	*ROD Issued by FHWA*	/	/
☐	☐	2570	ITS Concept of Operations	/	/
			CONTAMINATION INVESTIGATION		
☐	☐	2810	Project Area Contamination Survey (PCS)	/	/
☐	☐	2820	Preliminary Site Investigation (PSI) for Contamination	/	/

MDOT PRECONSTRUCTION TASKS CONSULTANT CHECKLIST

PRELIMINARY ENGINEERING - DESIGN

YES	NO	PRECONSTRUCTION TASK NUMBER AND DESCRIPTION		DATE TO BE COMPLETED BY (mm/dd/yyyy)	
		DESIGN SCOPE VERIFICATION AND BASE PLAN PREPARATION			
☒	☐	3130	Verify Design Scope of Work and Cost	/	/
☐	☐	3310	Prepare Aerial Topographic Mapping	/	/
☐	☐	3320	Conduct Photogrammetric Control Survey	/	/
☐	☐	3321	Set Aerial Photo Targets	/	/
☐	☐	3325	Geotechnical Structure Site Characterization	/	/
☐	☐	3330	Conduct Design Survey	/	/
☐	☐	3340	Conduct Structure Survey	/	/
☐	☐	3350	Conduct Hydraulics Survey	/	/
☐	☐	3360	Prepare Base Plans	/	/

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☐	☐	*311M*	*Utility Notification*	/ /
☐	☐	3365	Pre-Conceptual ITS Design and Meeting	/ /
☒	☐	3370	Prepare Structure Study	09/22/2020
☐	☐	3375	Conduct Value Engineering Study	/ /
☐	☐	3380	Review Base Plans	/ /
☒	☐	3385	Preliminary Load Rating	09/22/2020
☐	☐	*332M*	*Base Plan Review (Pre-GI Inspection)*	/ /
☐	☐	3390	Develop the Maintaining Traffic Concepts	/ /
		PRELIMINARY PLANS PREPARATION		
☐	☐	3500	Develop Transportation Management Plan	/ /
☐	☐	3510	Perform Roadway Geotechnical Investigation	/ /
☐	☐	3520	Conduct Hydraulic/Hydrologic and Scour Analysis	/ /
☐	☐	3522	Drainage Study, Storm Sewer Des, Str. Best Mgt Practices	/ /
☐	☐	3530	Geotechnical Foundation Engineering Report	/ /
☐	☐	3535	Conduct Str. Review for Arch. & Aesthetic Improvements	/ /
☐	☐	3540	Develop the Maintaining Traffic Plan	/ /
☐	☐	3551	Prepare/Review Preliminary Traffic Signal Design Plan	/ /
☐	☐	3552	Develop Preliminary Pavement Marking Plan	/ /
☐	☐	3553	Develop Preliminary Non-Freeway Signing Plan	/ /
☐	☐	3554	Develop Preliminary Freeway Signing Plan	/ /
☐	☐	3555	Prepare/Review Preliminary Traffic Signal Operations	/ /
☒	☐	3570	Prepare Preliminary Structure Plans	02 /16/ 2021
☐	☐	3580	Develop Preliminary Plans	/ /
☐	☐	3585	Final ITS Concept Design and Meeting	/ /
☐	☐	3590	Review The Plans	/ /
☒	☐	*352M*	*THE Plan Review Meeting*	03 /16/ 2021
☐	☐	3595	Conduct ITS Structure Foundation Investigation	/ /

MDOT PRECONSTRUCTION TASKS CONSULTANT CHECKLIST

PRELIMINARY ENGINEERING - DESIGN (cont'd)

YES	NO	PRECONSTRUCTION TASK NUMBER AND DESCRIPTION		DATE TO BE COMPLETED BY (mm/dd/yyyy)
		UTILITIES		
☒	☐	3610	Compile Utility Information	/ /
☐	☐	3615	Compile ITS Utility Information	/ /
☐	☐	3650	Coordinate RR Involvement for Grade Separations	/ /
☐	☐	3655	Coordinate RR Involvement for At-Grade Crossings	/ /
☒	☐	3660	Resolve Utility Issues	/ /

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☐	☐	*360M*	*Utility Conflict Resolution Plan Distribution*	/ /
☒	☐	*361M*	*Utility Meeting*	/ /
☐	☐	3670	Develop Municipal Utility Plans	/ /
☐	☐	3672	Develop Special Drainage Structures Plans	/ /
☐	☐	3675	Develop Electrical Plans	/ /
☐	☐	3680	Preliminary ITS Communication Analysis	/ /
☐	☐	3690	Power Design (Power Drop in Field)	/ /
			MITIGATION/PERMITS	
☐	☐	3710	Develop Required Mitigation	/ /
☐	☐	3720	Assemble Environmental Permit Applications	/ /
☐	☐	3730	Obtain Environmental Permit	/ /
			FINAL PLAN PREPARATION	
☐	☐	3815	Geotechnical Structure Design Review	/ /
☐	☐	3821	Prepare/Review Final Traffic Signal Design Plan	/ /
☐	☐	3822	Complete Permanent Pavement Marking Plan	/ /
☐	☐	3823	Complete Non-Freeway Signing Plan	/ /
☐	☐	3824	Complete Freeway Signing Plan	/ /
☐	☐	3825	Prepare/Review Final Traffic Signal Operations	/ /
☐	☐	3830	Complete the Maintaining Traffic Plan	/ /
☐	☐	3840	Develop Final Plans and Specifications	/ /
☒	☐	3850	Develop Structure Final Plans and Specifications	6/15/2021
☐	☐	**3870**	**Final Project Coordination Review**	/ /
☒	☐	3875	Final Load Rating	6/15/2021
☒	☐	**3885**	**Finalize Plans**	6/15/2021
☒	☐	*388M*	*Final Project Coordination Meeting*	7/6/2021
☒	☐	*380M*	*Plan Completion*	9/10/2021
☒	☐	*389M*	*Plan Turn-In*	12/17/2021
☐	☐	3880	CPM Quality Assurance Review	/ /
☐	☐	3890	Final ITS Communication Analysis	/ /

MDOT PRECONSTRUCTION TASKS CONSULTANT CHECKLIST

PRELIMINARY ENGINEERING – RIGHT OF WAY

YES	NO	PRECONSTRUCTION TASK NUMBER AND DESCRIPTION		DATE TO BE COMPLETED BY (mm/dd/yyyy)
		EARLY RIGHT OF WAY WORK		
☐	☐	4100	Real Estate Pre-Technical Work (combines 411M, 4120)	/ /

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☐	☐	4150	Real Estate Technical Work (combines 4130, 4140)	/ /
☐	☐	*413M*	*Approved Marked Final ROW*	/ /
		ROW APPRAISAL		
☐	☐	4350	Real Estate Appraisals (combines 4411, 4412, 4413, 4420)	/ /
		ROW ACQUISITION		
☐	☐	4450	Real Estate Acquisitions (combines 4430, 4710, 4720)	/ /
☐	☐	4510	Conduct Right Of Way Survey & Staking	/ /
☐	☐	*442M*	*ROW Certification*	/ /

MDOT PRECONSTRUCTION TASKS CONSULTANT CHECKLIST

POST LETTING/AWARD TASKS (for reference only)

YES	NO	PRECONSTRUCTION TASK NUMBER AND DESCRIPTION		DATE TO BE COMPLETED BY (mm/dd/yyyy)
☐	☐	4810	Complete Acquisition Process	/ /
☐	☐	4820	Manage Excess Real Estate	/ /
☐	☐	4830	Provide Post-Certification Relocation Assistance	/ /
☐	☐	4910	Conduct ROW Monumentation	/ /
☐	☐	5010	Construction Phase Engineering and Assistance	/ /
☐	☐	5020	Prepare As-Built Drawings	/ /

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CONSULTANT PAYMENT – Actual Cost Plus Fixed Fee:

Compensation for this project shall be on an **actual cost plus fixed fee** basis. This basis of payment typically includes an estimate of labor hours by classification or employee, hourly labor rates, applied overhead, other direct costs, subconsultant costs, and applied fixed fee. The fixed fee for profit allowed for this project is 11.0% of the cost of direct labor and overhead.

All billings for services must be directed to the Department and follow the current guidelines. The latest copy of the "Professional Engineering Service Reimbursement Guidelines for Bureau of Highways" is available on MDOT's website. This document contains instructions and forms that must be followed and used for billing. Payment may be delayed or decreased if the instructions are not followed.

Payment to the Consultant for services rendered shall not exceed the maximum amount unless an increase is approved in accordance with the contract with the Consultant. Typically, billings must be submitted within 60 days after the completion of services for the current billing. The final billing must be received within 60 days of the completion of services. Refer to your contract for your specific contract terms.

Direct expenses, if applicable, will not be paid in excess of that allowed by the Department for its own employees in accordance with the State of Michigan's Standardized Travel Regulations. Supporting documentation must be submitted with the billing for all eligible expenses on the project in accordance with the Reimbursement Guidelines. The only hours that will be considered allowable charges for this contract are those that are directly attributable to the activities of this project.

MDOT will reimburse the consultant for vehicle expenses and the costs of travel to and from project sites in accordance with MDOT's Travel and Vehicle Expense Reimbursement Guidelines, dated May 1, 2013. The guidelines can be found at http://www.michigan.gov/documents/mdot/Final_Travel_Guidelines_05-01-13_420289_7.pdf?20130509082418. MDOT's travel and vehicle expense reimbursement policies are intended primarily for construction engineering work. Reimbursement for travel to and from project sites and for vehicle expenses for all other types of work will be approved on a case by case basis.

MDOT will pay overtime in accordance with MDOT's Overtime Reimbursement Guidelines, dated May 1, 2013. The guidelines can be found at http://www.michigan.gov/documents/mdot/Final_Overtime_Guidelines_05-01-13_420286_7.pdf?20130509081848. MDOT's overtime reimbursement policies are intended primarily for construction engineering work. Overtime reimbursement for all other types of work will be approved on a case by case basis.

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ATTACHMENT C

SCOPE OF SERVICE
FOR
UTILITY COORDINATION

The Consultant is directly responsible for all aspects of the project's utility coordination. The Consultant is expected to provide technical assistance to MDOT, utilities and other stakeholders regarding utility identification, project utility coordination and utility conflict resolution.

A utility is defined as any privately, publicly, municipal or cooperatively owned line, facility, or system for producing, transmitting, or distributing communication, cable television, power, electricity, light, heat, gas, oil, crude products, water, steam, waste, or any other similar commodity, including any fire or police signal system or street lighting system.

MDOT shall -

- Provide a preliminary list of utilities, with contact information, that may have facilities located within the project limits. This list may not be 100% accurate and/or complete.
- Provide assistance, if necessary, in contacting utilities to obtain facility records.
- Provide Consultant with utility responses and facility records if utility information solicitation has been performed.
- Organize and host a kick-off meeting with Consultant and MDOT prior to Consultant beginning utility coordination services.

Consultant shall -

- Maintain a Utility Conflict Matrix* spreadsheet and deliver as the bi-weekly status report.
- Distribute form letters, plans, etc. as outlined in Section 14.16 (Request for Utility Information) and Section 14.26 (Distribution of Preliminary Plans to Utilities and Utility Coordination Meeting) of the MDOT Road Design Manual.
    - Identify existing/proposed utility owners and facilities.
    - Collect and compile utility responses.
    - Follow up with non-responsive utilities.
- Schedule and conduct utility meetings for the resolution of conflicts between utility facilities and proposed construction.
    - Identify conflicts, discuss possible design modifications, develop utility relocation schemes, discuss reimbursable relocations, and discuss project scope and schedule.
    - Identify the utility's design and construction contacts and ensure the plan's note sheet utility contact information is accurate.
    - Record meeting minutes and distribute to all attendees.
- Schedule and conduct field meetings with individual utilities to resolve conflicts.
- Schedule and conduct meetings convened for the purpose of utility betterments.

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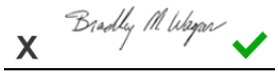
- Ensure municipal utility relocations, betterments and reimbursements follow policies and procedures outlined in Chapter 9 of the MDOT Road Design Manual.
- Identify eligible reimbursable utility relocations, for public/private utilities, as outlined in 23 Code of Federal Regulations (CFR) Part 645 Subparts A and B – Utilities and ensure 23 CFR Part 635.410 - Buy America Requirements are met.
    - Collect documentation to evaluate reimbursable utility relocations.
- Evaluate utility relocation plans for compatibility with the proposed project.
- Ensure utility relocation schedules do not impact the project schedule.
- Confirm utility relocation permit applications are submitted to the TSC.
- Prepare the "Utilities Status Report" (MDOT Form 2286) and "Notice to Bidders - Utility Coordination" documents.
- Track and monitor utility relocation progress.

Deliverables (Provided to the MDOT TSC Utility Coordinator and MDOT Project Manager):

- Courtesy copies of all correspondence with the utilities
- Utility Conflict Matrix
- Utility coordination meeting minutes
- Reimbursable utility relocation documentation
- Utilities Status Report and Notice to Bidders - Utility Coordination

* The Utility Conflict Matrix (UCM) is located on the http://www.trb.org/Main/Blurbs/166731.aspx website under Training materials > Prototype 1 – Stand-alone UCM. The UCM was developed as part of the Transportation Research Board's (TRB) second Strategic Highway Research Program (SHRP 2) Report S2-R15B-RW-1: Identification of Utility Conflicts and Solutions which provides concepts and procedures to identify and resolve utility conflicts. Tools described in the report include utility conflict matrices that enable users to organize, track, and manage conflicts that frequently arise.



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